Amendments to the Specification

Please add the following new paragraph on page 1 as the first sentence of the specification directly following the title:

This application is a continuation of U.S. patent application No. 09/695,639, filed October 24, 2000, which is a continuation of U.S. patent application No. 09/187,335, filed November 6, 1998 (now U.S. patent 6,152,937). Both of these prior applications are hereby incorporated by reference herein in their entireties.

Please replace the paragraph that begins at page 1, line 10 and ends at page 2, line 10 with the following amended version of that paragraph:

Tubular grafts are frequently needed in medical procedures. For example, a coronary bypass procedure may involve the installation of a tubular graft between an aperture that has been formed in the side wall of the aorta and an aperture that has been formed in the side wall of a coronary artery downstream from an occlusion or blockage in that artery. Each end of the graft must be connected to the side wall of either the aorta or the coronary artery. Each such connection must extend annularly around the associated end of the graft conduit and be fluid-tight so that no blood

will leak out. One common way to produce such connections is by suturing. It will be appreciated, however, that making such connections by suturing can be extremely difficult, time-consuming, and dependent on the skill of the physician for the quality of the results. There is also increasing interest in less invasive procedures which tend to impose constraints on the physician's access to the sites at which graft connections must be made and thereby make it more difficult or even impossible to use suturing to make such connections (see, for example, Goldsteen et al. U.S. patent ~~application No. 08/745,618, filed November 7, 1996~~ 5,976,178, Sullivan et al. U.S. patent ~~application No. 08/844,992, filed April 23, 1997~~ 6,120,432 and ~~Sullivan et al. U.S. patent application No. 08/869,808, filed June 5, 1997~~ published PCT patent application WO 98/55027, all of which are hereby incorporated by reference herein in their entireties).

Please replace the paragraph that begins at page 2, line 11 and ends at page 2, line 21 with the following amended version of that paragraph:

Various types of mechanical connectors have been developed to reduce or eliminate the need for suturing, but improvements are constantly sought for such mechanical connectors with respect to considerations such as ease and

speed of use, ease of manufacture, strength and permanence of the resulting connection, etc. A connector, including methods for making and installation thereof, is disclosed in ~~U.S. application serial No. 09/016,721 filed January 30, 1998~~ published PCT patent application WO 99/38454, and is incorporated by reference in its entirety herein.

Please replace the paragraph that begins at page 3, line 2 and ends at page 3, line 17 with the following amended version of that paragraph:

These and other objects of the invention are accomplished in accordance with the principles of the invention by providing a connector which may be attached to two tubular structures without the use of sutures or other attachment means. The connector is preferably formed by using a highly elastic material such as nickel and titanium alloy (nitinol) metal. A first plurality of fingers is configured to engage an interior surface of the side wall of the existing conduit. A second plurality of fingers is configured to engage an exterior surface of the side wall of the existing conduit. A third plurality of fingers is received in an interior lumen of the graft conduit, and a fourth plurality of fingers is configured to pierce the graft

conduit. The connector is radially deformable between a first size and a second size.

Please replace the paragraph that begins at page 5, line 16 and ends at page 5, line 18 with the following amended version of that paragraph:

FIG. 12 is a simplified sectional view of the FIG. 11 apparatus, illustrating a stage in the installation of the FIG. 1 component in a patient.

Please replace the paragraph that begins at page 7, line 5 and ends at page 7, line 6 with the following amended version of that paragraph:

FIG. 21(c) is a side view similar to FIG. ~~21(c)~~ 21(b), illustrating an alternative embodiment.

Please replace the paragraph that begins at page 7, line 21 and ends at page 7, line 23 with the following amended version of that paragraph:

FIG. 24 is a cross-sectional view of an apparatus for installing the component of FIGS. 20(a)-20(b).

Please replace the paragraph that begins at page 8, line 6 and ends at page 8, line 8 with the following amended version of that paragraph:

FIG. 31 is an enlarged sectional view, similar to FIG. 30, illustrating withdrawal of the ~~apparatus~~ FIG. 24 apparatus from the operative site.

Please replace the paragraph that begins at page 9, line 9 and ends at page 9, line 11 with the following amended version of that paragraph:

FIG. 44 is a sectional view similar to FIG. 42, illustrating a stage in the installation of a component ~~of~~ on the graft conduit.

Please replace the paragraph that begins at page 11, line 1 and ends at page 11, line 15 with the following amended version of that paragraph:

A first step in manufacturing component 10 in accordance with the invention is to form the sheet into a cylindrical tube. The next step involves cutting or ~~machine~~ machining the tube. The following cutting steps may be performed simultaneously, or in any order deemed appropriate by one skilled in the art. The axial end portions of the sheet are substantially axially cut to provide a plurality of fingers. Substantially axial "U"-shaped cuts may be made at spaced intervals in order to provide a separation between the fingers. In this embodiment, the internal opposition fingers 18 and engagement members 16 are formed by such cutting and

extend substantially axially from the band portion 11. As will be described below, ~~the~~ internal opposition fingers 18 and engagement members 16 define the distal portion of the connector.

Please replace the paragraph that begins at page 12, line 1 and ends at page 12, line 16 with the following amended version of that paragraph:

Thus, a portion of the band 11 is removed by the formation of the external opposition fingers 20. Further material is removed from the band 11 by a series of substantially axial cuts to create internal struts 14 at the opposite axial end from the cuts made to form fingers 18 and 16. Thus, band portion 11 has a substantially "zigzag" configuration for coaxial mounting with respect to the tubular graft portion, including struts 14 and intermediate strap portions 19 defined between each set of internal struts 14. The combination of the resiliency of the component material, axial cuts, "U"-shaped cuts, and apertures 22 ~~allow~~ allows radial contraction and expansion of the diameter 24 of band 11, and therefore of component 10, during delivery and deployment, as will be described in greater detail below.

Please replace the paragraph that begins at page 13, line 24 and ends at page 13, line 31 with the following amended version of that paragraph:

Connector 10, subsequent to formation, above, is used to join a graft conduit and a tubular body conduit in an end-to-side anastomosis. The graft conduit may be a natural conduit (e.g., a relocated portion of the patient's tubular body tissue), an artificial conduit (e.g., of the type shown in above-mentioned ~~application No. 08/745,618~~ U.S. patent 5,976,178), or a composite of natural and artificial conduits.

Please replace the paragraph that begins at page 14, line 22 and ends at page 15, line 6 with the following amended version of that paragraph:

The conduit 30 is provided with a first cut 46 defining an oblique angle of approximately 45° with respect to the conduit axis adjacent the second location 38 (FIG. 6). It is contemplated that this procedure may be used for a conduit which is not entirely removed from its original location. For example, the internal mammary artery (IMA) is used as a blood source in coronary artery bypass procedures by cutting one end of the IMA and connecting that end to the coronary artery downstream of an occlusion by end-to-side

anastomosis. A second cut 47 is made at approximately a 90° angle with respect to the axis adjacent the first location 36. This second cut 47 passes through both the graft 30 and introducer 40. The cut portion of the introducer 40 outside the graft conduit 30 is discarded. The graft 30 and introducer 40 are removed such that the introducer 40 remains within the graft 30 (FIG. 7), and both graft 30 and introducer 40 are placed in an appropriate solution. The graft 30 is to be used for connection to the side wall of the tubular body conduit.

Please replace the paragraph that begins at page 15, line 23 and ends at page 16, line 19 with the following amended version of that paragraph:

FIG. 8 illustrates apparatus 50 prior to the mounting of component 10 therein. Apparatus 50, includes a number of coaxial sleeves which are relatively axially slidable and angularly rotatable. Preferably, the sleeves are actuable by the physician from the proximal end portion of the instrument. An inner rod 52 is provided with a distal tip 54. An atraumatic end ~~55~~ 59 of distal tip 54 may be curved or conical to facilitate insertion into an aperture in the side wall of a tubular body conduit. If the conduit is particularly delicate or susceptible to collapse, the distal

tip may be provided with more gradual taper as deemed appropriate by the physician. Surrounding inner rod 52 is an intermediate sleeve 56. Likewise, surrounding intermediate sleeve 56 is an outer sleeve 58. At least the distal end portions of inner rod 52, intermediate sleeve 56, and outer sleeve 58 are preferably manufactured from a rigid material such a metal or a surgical grade plastic material. Locking mechanism 60 is provided to releasably secure inner rod 52 with respect to intermediate sleeve 56. Similarly, locking mechanism 62 releasably secures intermediate sleeve 56 with respect to outer sleeve 58. Locking mechanisms 60 and 62 may be manufactured in accordance with any type of mechanism known in the art, such as a releasable clamp or friction fitting, set screw, or bayonet mount. Locking mechanisms 60 and 62 are advantageously selected to maintain the small overall diameter of apparatus 50. Sheath 64 is provided to surround outer sleeve 58. Sheath 64, which also protects the graft conduit from damage during the anastomosis, may be fabricated from a flexible material, such as a polymer.

Please replace the paragraph that begins at page 16, line 20 and ends at page 16, line 33 with the following amended version of that paragraph:

As illustrated in FIG. 8(a), apparatus 50a, substantially identical to apparatus 50, is provided with a crenelated configuration 53 on end portions of outer sheath ~~64~~ 64a, outer sleeve 58a and distal tip portion ~~54~~ 54a. The crenelated configuration 53 defines a series of alternating protrusions 55 and notches 57, which cooperate with fingers 14, 18 and 20 of component 10, as will be described in greater detail below. The various components of apparatus 50a are configured for both axial movement and angular rotation. It is contemplated that remote rotation of the components of apparatus 50a is enabled by various rotation devices, such as collars or knobs known in the art, provided at the proximal end of the device (not shown).

Please replace the paragraph that begins at page 17, line 8 and ends at page 17, line 22 with the following amended version of that paragraph:

Connector 10 is mounted at the distal portion of instrument 50, as shown in FIG. 10. Component 10 is radially compressed for placement on intermediate sleeve 56. More particularly, the resilient characteristics of band portion 11 of connector 10 enable the nominal diameter 24 (see, FIG. 3) to be reduced to a smaller diameter 76 (FIG. 10). Internal opposition fingers 18 (shown in their relaxed

curvilinear configuration in FIG. 3) are deflected radially inwardly toward parallelism with the longitudinal axis and retained in a substantially axial configuration within space ~~72~~ 70 by collar 68. Internal struts 14 are maintained in position around intermediate sleeve 56 and in engagement with shoulder portion 72 by outer sleeve 58.

Please replace the paragraph that begins at page 19, line 3 and ends at page 19, line 19 with the following amended version of that paragraph:

Subsequently, locking mechanism 62 (see, ~~FIG. 4~~ FIG. 8) is released and outer sleeve 58 may be withdrawn proximally while intermediate sleeve 56 remains stationary (as indicated by arrow C in FIG. 13). Internal ~~opposition fingers~~ struts 14 are released and engage the inner surface of graft conduit 30. Connector 10 expands radially outwardly in the direction shown by arrow D. This expansion allows connector 10 to place a compression stress, by pressing the wall of the graft conduit 30 against the aperture of conduit 90, to provide a secure hemodynamic seal. In addition, the increased radial dimension of connector 10 provides sufficient clearance for distal tip 54 to be withdrawn proximally from body conduit 90. Subsequently, inner rod 52

with distal tip 54 and intermediate 56 and outer sleeves 58 are removed proximally from the operative site.

Please replace the paragraph that begins at page 20, line 7 and ends at page 20, line 29 with the following amended version of that paragraph:

As described above with respect to FIG. 8(a), the crenelated configuration 53 permits the installation of component 10 with respect to the body conduit 90 by relative angular rotation of the components of apparatus 50a with respect to component 10, rather than by axial displacement, as with apparatus 50 (FIGS. 12-14). Component 10 is mounted with respect to apparatus 50a substantially as described with respect to apparatus 50 (FIGS. 10-11). However, protrusions 55 on outer sheath ~~64~~ 64a retain fingers 20 in a substantially parallel configuration, protrusions 55 on outer sleeve ~~58~~ 58a retain fingers 14 in a substantially parallel configuration, while protrusions 55 on distal tip 54a likewise retain fingers 18. Angular rotation of distal tip 54a with respect to component 10 aligns notches 57 with fingers 18, to thereby permit ~~finger~~ fingers 18 to approximate the curved configuration of FIG. 12. Similarly, angular rotation of outer sleeve ~~58~~ 58a with respect to component 10 permits ~~finger~~ fingers 14 to displace radially

outward as illustrated in FIG. 13. Finally, rotation of outer sheath ~~64~~ 64a permits fingers 20 to resume the curved configuration (FIG. 14).

Please replace the paragraph that begins at page 21, line 30 and ends at page 22, line 19 with the following amended version of that paragraph:

FIGS. 17(a) and 17(b) illustrate yet another embodiment of the subject invention. Connector 10c is positioned around the outer perimeter of the graft conduit, and is not provided with the internal struts 14 of connector 10. In plan view (FIG. 17(a)), the machined section of connector 10c is similar to that of connector 10. Connector 10c is provided with internal opposition finger 18c, intermediate strap portions 19c and engagement members 16c. However, external opposition fingers 20c extend from connection strap portions 19c rather than from the medial portions of internal opposition fingers 18c, as with connector 10. Apertures 22c are provided as with the previous embodiments to allow expansion and reduction of the diameter of the connector. As illustrated in FIG. 17(b), graft 30 is positioned inside connector 10c such that the graft is engaged by engagement members 16c and maintained in a radially flared configuration. Connector 10c may be

installed substantially as described with respect to FIGS. ~~6-9~~ 10-14, although it is contemplated that other installation methods may be used. More particularly, internal opposition finger 18c may be deflected into a flattened position by collar 68 of distal tip 54 (see similar FIGS. 10-11), and internal opposition fingers 20c deflected by outer sheath 64.

Please replace the paragraph that begins at page 22, line 20 and ends at page 23, line 8 with the following amended version of that paragraph:

A further alternative embodiment of the subject invention is illustrated in FIGS. 18(a) and 18(b). In plan view, the machined section of connector 10d (FIG. 18(a)) is substantially similar to the section of connector 10b (FIG. ~~12(a)~~ 16(a)). However, external opposition finger 20d extends from an external support strut 26d. As illustrated in FIG. 18(b), the graft 30 is positioned between internal struts 14d and external struts 26d, and engagement members 16d are used to secure the graft 30 to connector 10d in a radially flared configuration. The connector 10d is held in place in body conduit 90 by internal opposition fingers 18d and external opposition fingers 20d. External opposition finger 20d has a flared configuration and conforms to the

flared configuration of the body conduit opening. Connector 10d may be installed using apparatus such as instrument 50 substantially as described above with respect to FIGS. ~~6-9~~ 8 and 9. More particularly, internal opposition finger 18d may be deflected into a flattened position by collar 68 of distal tip 54, and internal opposition fingers 20d deflected by outer sheath 64. Additional structure in apparatus 50 may be provided to cooperate with deployment loops 24d as illustrated in FIG. ~~16(e)~~ 18(a) above.

Please replace the paragraph that begins at page 24, line 8 and ends at page 24, line 30 with the following amended version of that paragraph:

As illustrated in FIG. 19(c), connector 10e is formed such that outer opposition fingers 84e and internal opposition fingers 86e extend radially outward to form a substantially "U"-shaped configuration. Engagement members 88e are oriented radially outward. Connector 10e is installed with respect to conduit 90 and graft conduit 30 in a substantially similar manner to connector 10, as described with respect to FIGS. 10-14, above. With reference to FIG. 10, above, connector 10e may be mounted in a substantially similar manner, such that connector 10e is radially compressed when it is fitted over intermediate sleeve 56.

Each radial expansion member 82e is positioned coaxially within outer sleeve 58, and each internal opposition finger 86e is held beneath collar 68 of distal tip portion 54. Graft conduit 30 is positioned over connector 10e such that engagement members 88e pierce the graft conduit and secure the graft tissue in the neck portion 90e of each engagement member 88e (FIG. 19(b)). With reference to FIG. 11, connector 10e is mounted in a substantially similar manner, such that each outer opposition finger 84e is deflected proximally and maintained in position by sheath 64.

Please replace the paragraph that begins at page 24, line 31 and ends at page 25, line 8 with the following amended version of that paragraph:

When connector 10e is installed in body conduit 90 as shown in FIG. 19(c), connector 10e is permitted to return to a radially expanded configuration. Radial expansion ~~member~~ members 82e contact and support graft conduit 30, which is secured by engagement members 88e. The end portion of graft conduit 30 is also positioned between radial expansion members 82e and outer opposition fingers 84e to provide a trumpet-shaped, or flared configuration. The wall of body conduit 90 is engaged by outer opposition fingers 84e and internal opposition fingers 86e, which have assumed an

angled, substantially "U"-shaped configuration. This configuration, as described above, improves fluid flow and graft patency.

Please replace the paragraph that begins at page 25, line 25 and ends at page 26, line 12 with the following amended version of that paragraph:

Yet another alternative embodiment of the subject invention is illustrated in FIGS. 21(a), ~~and~~ 21(b) and 21(c). Connector 10g is provided with a band portion ~~80a~~ 80g, including a plurality of loops 82g connected at respective corners, each loop 82g defining an aperture 84g. A plurality of fingers is provided on both distal and proximal end portions of band 80g. Internal opposition fingers 86g extend from the distal side of each of alternating loops 82g. External opposition fingers 88g extend from the distal side of the same loop 82g as fingers ~~88g~~ 86g. As illustrated in FIG. 21(b), connector 10g is formed such that internal opposition fingers 86g and external opposition fingers 88g assume a "U"-shaped configuration to engage the wall of body conduit 90. As shown in the FIG., the "U"-shaped configuration of fingers 86g and 88g may be formed such that the conduit tissue assumes a radially flared bell-shaped configuration. Alternatively, fingers 86'g and 88'g may be

given a "U"-shaped configuration which is symmetrical on both sides of the wall of conduit 90, as shown in FIG. 21(c). (It is contemplated that each of the embodiments of the subject invention may incorporate the symmetrical "U"-shaped configuration as well.)

Replace the paragraph that begins at page 25, line 25 and ends at page 26, line 12 with the following amended version of that paragraph:

Yet another alternative embodiment of the subject invention is illustrated in FIGS. 21(a) and 21(b). Connector 10g is provided with a band portion ~~80a~~ 80g, including a plurality of loops 82g connected at respective corners, each loop 82g defining an aperture 84g. A plurality of fingers is provided on both distal and proximal end portions of band 80g. Internal opposition fingers 86g extend from the distal side of each of alternating loops 82g. External opposition fingers 88g extend from the distal side of the same loop 82g as fingers 88g. As illustrated in FIG. 21(b), connector 10g is formed such that internal opposition fingers 86g and external opposition fingers 88g assume a "U"-shaped configuration to engage the wall of body conduit 90. As shown in the FIG., the "U"-shaped configuration of fingers 86g and 88g may be formed such that the conduit tissue

assumes a radially flared bell-shaped configuration. Alternatively, fingers 86'g and 88'g may be given a "U"-shaped configuration which is symmetrical on both sides of the wall of conduit 90, as shown in FIG. 21(c). (It is contemplated that each of the embodiments of the subject invention may incorporate the symmetrical "U"-shaped configuration as well.)

Please replace the paragraph that begins at page 26, line 31 and ends at page 27, line 18 with the following amended version of that paragraph:

FIGS. 23(a) and 23(b) illustrate another embodiment of the subject invention. As for the connectors depicted in FIGS. 21-22 above, connector 10i is provided with a band section 80i including a plurality of loops 82i joined at respective corners and defining apertures 84i therein. Internal opposition fingers 86i and external opposition fingers 88i are substantially "U" shaped and have a pair of end portions. Internal opposition fingers 86i extend from the distal side of band section 80i. Likewise, external opposition fingers 88i extend from the proximal side of band section 80i. FIG. 23(b) illustrates ~~that~~ the graft positioned inside connector 10i. The connector 10i is formed such that internal opposition fingers 88i form a flared

configuration. The end portion of the graft is substantially expanded to assume this flared configuration and maintained in position by everting the end portion over the internal opposition fingers 86i without necessarily piercing the graft material or tissue. Thus, opposition fingers 86i may be provided with atraumatic tips. Internal 86i and external opposition fingers 88i are formed in the "U"-shaped configuration to grip the tissue of the body conduit 90 therebetween.

Please replace the paragraph that begins at page 27, line 19 and ends at page 27, line 32 with the following amended version of that paragraph:

The connectors described above, particularly connector 10f (FIGS. 20(a) and 20(b)), are also suited for installation in the patient through percutaneous installation without the necessity to make surgical incisions in the patient near the operative site. Percutaneously deployed apparatus may be inserted into the lumen of a body conduit at a remote entry location and advanced intraluminally within the patient to the anastomosis site. Such percutaneous procedures are disclosed in commonly-assigned ~~copending U.S. application serial number 08/745,618 filed November 7, 1996, and serial number 08/839,199, filed April 23,1997~~ U.S. patent

5,976,178, and U.S. patent 6,036,702, which are incorporated by reference in their entirety herein.

Please replace the paragraph that begins at page 28, line 10 and ends at page 29, line 2 with the following amended version of that paragraph:

Apparatus 250 is particularly suitable for percutaneous installation of connector 10f. FIG. 25 illustrates apparatus 250 with connector 10f and graft conduit 130 in position within the lumen of existing body conduit 90. Apparatus 250 may be adapted for insertion within and passage along a catheter or other tube. Consequently, the constituent components are preferably flexible. As illustrated in the FIG., a catheter, or sheath 264, may be positioned partially within body conduit 90. The distal end 265 of catheter 264 extends outwardly through an aperture in the wall of conduit 90 and serves as an access port from the inside of conduit 90 to the outside surrounding operative region. (Exemplary catheters useful in connection with the above are described in ~~U.S. application serial number 08/745,618~~ Goldsteen et al. U.S. patent 5,976,178, incorporated by reference above, and ~~serial number 09/014,759, filed January 28, 1998~~ published PCT patent application WO 99/38441 and ~~U.S. application serial number~~

~~09/010,367, filed January 21, 1998~~ Berg et al. U.S. patent 6,013,190, both incorporated by reference in their entirety herein.) Connector 10f is positioned at the distal end portion of apparatus 250. The various fingers are ~~29~~ retained in a configuration substantially parallel with longitudinal axis of apparatus 250. Graft conduit 130 is connected to connector 10f as will be described below. Apparatus ~~150~~ 250, along with connector 10f and graft conduit 130, are passed into and along the lumen of body conduit 90 from an access point which may be remote from the anastomosis site.

Please replace the paragraph that begins at page 29, line 3 and ends at page 30, line 13 with the following amended version of that paragraph:

As illustrated in FIG. 26, connector 10f is mounted in apparatus 250. (It is noted here that connector 10f is oriented in the opposite direction in FIGS. 25-31, compared with FIGS. 20(a)-20(b), above. For consistency, the distalmost portion is represented in the same direction in these FIGS. During surgical procedures which are typically conducted from outside to inside the body conduit, fingers 86f are the distalmost portions of connector 10f (FIGS. 20(a)-20(b)), i.e., they are furthest from the physician.

However, during percutaneous procedures which may be conducted from inside to outside the body conduit, fingers 82f are distalmost.[[]] Inner rod or inner sheath 252 may have an outer diameter smaller than the nominal diameter of connector 10f. Connector 10f is fitted around inner rod or inner sheath 252 and radially compressed. Fingers 82f are fitted underneath circumferential flange 268 of distal tip portion 254 and deflected towards parallelism with the longitudinal axis to a flattened distally-extending configuration. Likewise, internal opposition fingers 86f are flattened to a proximally-extending configuration also towards parallelism with the longitudinal axis. Internal opposition fingers 86f are retained in this configuration by outer sleeve 258. Engagement members 88f extend radially outward and engage the graft conduit 130 which is positioned at the distal end portion of inner rod 252 and distal tip 254. Engagement members 88f may alternatively be similar to engagement members 88e (See, FIGS. 19(a)-19(c)), and have a narrow neck portion disposed between a pair of shoulder portions to improve securement of the graft conduit. Catheter 264 is positioned over connector 10f and graft conduit 130, such that the external opposition fingers 84f are deflected to a proximally facing configuration toward

parallelism with the longitudinal axis and maintained in this configuration by sheath 264. The configuration illustrated in FIG. 26 is advantageous for passage into and along a body conduit at the operative site. The retraction of the external opposition fingers 84f and 85f within catheter 264 and the atraumatic distal tip 254 minimizes the possibility of injuring adjacent tissue. Apparatus 250 is advanced along body conduit 90 until connector 10f is positioned just outside the body conduit 90 as shown, with radiused finger portions 85f outside the wall of conduit 90.

Please replace the paragraph that begins at page 31, line 5 and ends at page 31, line 16 with the following amended version of that paragraph:

Outer sleeve 258 is retracted proximally until it clears the internal opposition fingers 86f of connector 10f, as illustrated in FIG. 29. Internal opposition fingers 86f expand outwardly from the slightly flattened configuration (illustrated in dashed line) to a curved, radial configuration in order to engage the inner surface of conduit wall 90. Preferably, retraction of ~~out~~ outer sleeve 258 is performed while tension is applied on inner rod or sheath 252 in order to maintain connector 10f and external opposition

fingers 84f in an upright, secure position with respect to the wall of conduit 90.

Please replace the paragraph that begins at page 31, line 34 and ends at page 32, line 21 with the following amended version of that paragraph:

An alternative embodiment of a percutaneously deployed connector is connector 100, which is formed from a tube of material substantially as described above with respect to FIG. 2. As illustrated in FIGS. 32-33, component 100 is provided with a plurality of internal support struts 114 and internal opposition fingers 118. Outer opposing fingers are omitted in this particular embodiment, although it is contemplated that such fingers may be useful in accordance with this invention. Radial expansion members 114 are formed with a flared configuration extending axially and radially outward for engaging the interior of the graft conduit, as will be described below. Internal opposition fingers 118 are oriented substantially radially outward. As with connector 10, a plurality of engagement members 116 are provided between adjacent fingers to secure the graft conduit. The planar representation of the machined section of FIG. ~~32~~ 32 is an exemplary embodiment, and other configurations are contemplated within the scope of this

invention. The connector 100 is given a nominal internal diameter 124. The resilient characteristics of the material and the apertures 120 permit the diameter 124 to be compressed and expanded during mounting and installation.

Please replace the paragraph that begins at page 33, line 3 and ends at page 33, line 28 with the following amended version of that paragraph:

As illustrated in FIG. 35, inner rod 152 has an outer diameter smaller than the nominal diameter 124 of connector 100 (See, FIG. ~~32~~ 33). Connector 100 is fitted around inner rod 152 and compressed. Fingers 114 are fitted underneath circumferential flange 168 of distal tip portion 154 and deflected towards parallelism with the longitudinal axis to a flattened distally-extending configuration. Likewise, internal opposition fingers 118 are slightly flattened to a proximally-extending configuration also toward parallelism with the longitudinal axis. Engagement members 116 extend radially outward and engage the graft conduit 130 which is positioned at the distal end portion of inner rod 152. Engagement members may alternatively be similar to engagement members 88e (See, FIGS. 19(a)-19(c)), and have a narrow neck portion disposed between a pair of shoulder portions to improve securement of the graft conduit. (As

FIGS. 34-36 illustrate, it is contemplated that the procedure according to the invention may be conducted through an aperture in conduit 90 without the use of a catheter 190.) Apparatus 150 is advanced along body conduit 90 until connector 100 is positioned at the aperture of body conduit 90 as shown, with radial expansion members 114 extending outside conduit 90 and internal opposition fingers 118 positioned within conduit 90.

Please replace the paragraph that begins at page 36, line 4 and ends at page 36, line 18 with the following amended version of that paragraph:

Outer sleeve 258 is subsequently withdrawn proximally with respect to inner rod 252 (FIG. 41). When outer sleeve 258 is moved beyond the proximal end of connector 100, internal opposition fingers 118 move from the flattened configuration (illustrated in dashed line) to the curved configuration to engage the inner surface of the conduit wall. Simultaneously, the diameter of connector 100 expands to a larger diameter as indicated by the arrows. This provides a seal between the graft 230 and conduit 90. In addition, the increased internal diameter permits the distal tip 254 to be withdrawn proximally through connector 100 (not shown). Once the connector 100 has been properly

positioned, inner rod 252[[,]] and outer sleeve 258 are withdrawn from the conduit 90.

Please replace the paragraph that begins at page 36, line 19 and ends at page 36, line 35 with the following amended version of that paragraph:

~~FIG.~~ FIGS. 42-46 illustrate a further embodiment of the subject invention. Tool 500 is provided to facilitate the mounting of a connector onto an end portion of the graft conduit 30. Tool 500 is sized and configured to provide a flared, or everted edge to the graft conduit. This flared configuration of the graft assists in the connection with the tubular body structure by facilitating blood flow from the graft conduit to the body conduit. Furthermore, this configuration helps to seal the opening in the body conduit into which the graft is inserted and accommodates size variations between the graft and the opening. If the graft conduit is a natural blood vessel, e.g., the saphenous vein, this configuration permits the blood to remain in contact with endothelium tissue during the transition between the graft and the body conduit.

Please replace the paragraph that begins at page 38, line 21 and ends at page 38, line 31 with the following amended version of that paragraph:

Installation of the graft conduit 30 into a body conduit 90 having connector 550 attached is performed substantially as described above with respect to FIGS. 34-37. Connector 550 and graft conduit 30 may be mounted within an outer sheath, such as sheath ~~158~~ 58 of FIGS. ~~13-16~~ 8-13. Internal 554 and external opposition fingers 556 are maintained in a flattened configuration similar to that shown in FIG. 44. When connector is positioned in the body conduit 90, the sheath ~~158~~ 58 is withdrawn, and fingers return to their unstressed configuration as illustrated in FIG. 46.